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THE UNIVERSITY OF ALBERTA

AN INVESTIGATION OF THE RELATIONSHIP OF INTEGRATION SETTING
TO NEED FOR ACHIEVEMENT

by

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,

A Thesis

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "An Investigation of the Relationship of Integration Setting to Need for Achievement," submitted by Pauline A. Jones in partial fulfillment of the requirements for the degree Master of Education.

ABSTRACT

David McClelland and his associates (1953) have postulated that achievement motivation has its origin in early self-reliant achievement training. Proposing that an entrepreneurial background would promote such achievement training, this study was designed to investigate the influence of two contrasting integration settings (the entrepreneurial and the bureaucratic) upon the students' motivation to achieve. The investigation was carried out both in an urban and a rural area of Alberta.

The sample was composed of grade eight boys who hold membership in a Protestant religious group and whose parents were both born in Canada. This sample ($N = 146$) was grouped according to place of residence and integration setting.

The students' achievement motivation was assessed using the measure for need Achievement and the scoring procedure outlined by McClelland, Atkinson, Clark, and Lowell (1953). A two-way analysis of variance was applied to test the significance of the effects of integration setting and place of residence on the level of achievement motivation.

The major hypothesis of this study was supported. The level of achievement motivation was found to be higher among the entrepreneurial groups of both the rural and urban areas ($p < .001$). It may be concluded that the entrepreneurial background is more conducive to the development of Achievement. A model proposing a causal relation between these two variables, via child-rearing practices, was drawn up on

the basis of theoretical knowledge in the area under investigation.

While it was hypothesized that the level of achievement motivation would be higher among rural students, the overall main effects of place of residence were found not to be significant ($p = .29$).

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CHAPTER I

INTRODUCTION

Teachers and others engaged in the promotion of individual development have long been aware of the influence on behavior of one's desire to achieve. However, there is still limited understanding of how achievement motivation develops and of factors influencing this development.

The motivational theory of David McClelland and the development by him and his associates of a practical method for assessing achievement motivation have generated much research. During the last decade, well over 200 studies have been reported assessing the influence of achievement motivation on achievement performances in a variety of situations (Crandall, 1963). In contrast, there has been much less research aimed at an investigation of factors influencing the development of achievement motivation. Studies relating background characteristics to achievement motivation are quite scanty.

One of McClelland's major assumptions is that achievement motivation has its origin in the attempt of parents to train their children to do things for themselves at an early age and to do so in the presence of parental standards and sanctions. This assumption leads to the prediction that differential values and expectations as held by parents are instrumental, through their effect on child-rearing practices, in the development of achievement motivation.

It is generally agreed that individuals sharing common experiences

and living under common conditions tend to possess a commonality of values and expectations. Much valuable information has accrued from research based on this assumption. With reference to achievement motivation, McClelland (1961) reports evidence that the holding of common religious values is related to the degree of achievement motivation found in individuals possessing those values. As well, socio-economic groupings have been found to differ not only in their child-rearing practices but also in the degree to which they are achievement oriented.

Much further study is necessary in order to evaluate the importance of parental expectations for the development of achievement motivation and to isolate those values and expectations which are most likely to produce an Achievement. It is felt that studies designed to measure the differential effects on achievement motivation of contrasting backgrounds would prove valuable in extending knowledge of the development of achievement motivation. Certainly any finding leading to a better understanding in this area of development would have important significance not only for the formal educator but for the parent as well.

One factor affecting parental values and expectations for child-rearing is that of occupational level. Studies relating socio-economic status to parental values and child-rearing practices may be said to be largely investigations of various occupational groupings. Miller and Swanson (1958) have grouped occupations together not on the basis of training or salary but on the basis of motivational requirements and have found that their groups (the entrepreneurial and bureaucratic) do differ in child-rearing techniques. An understanding of the character-

istics of the entrepreneurial and bureaucratic working situations and of the qualities required for success in them leads one to propose that these two contrasting situations would promote value systems which would have a differential effect on the development of achievement motivation.

It was the purpose of the present investigation to study the influence of these two contrasting backgrounds upon the students' motivation to achieve. Specifically, the writer sought to determine whether students of entrepreneurial background differ from students of bureaucratic background with respect to their level of achievement motivation. The investigation was carried out both in an urban and a rural area of Alberta and was restricted to a well-defined section of the student population.

CHAPTER II

BACKGROUND OF THEORY AND RESEARCH

Murray's need theory

Need for achievement was first postulated by H. A. Murray (1938), one of the earlier spokesmen of motivational psychology. From intensive case studies, Murray and his associates arrived at a tentative list of twenty needs, which are called psychogenic needs, standing for common reaction systems and wishes. Murray attempted to relate these needs to each other by the following general definition:

A need is a construct which stands for a force (the phsyio-chemical nature of which is unknown) in the brain region, a force which organizes perception, apperception, intellection, conation, and action in such a way as to transform in a certain direction an existing, unsatisfying situation. This force manifests itself by leading the organism to search for or to avoid relevant environmental circumstances. It is the driving and directing force in human behavior. (1938, pp. 123-124)

The need for achievement (labelled "n Achievement" by Murray) is classified among the kind of actions which express what is commonly called ambition, will-to-power, or desire for accomplishment and prestige. n Achievement is the need to overcome obstacles, to exercise power, to strive to do something difficult as well and as quickly as possible.

David McClelland and his associates (McClelland, Atkinson, Clark and Lowell, 1953) have offered both a theory of motivation and a method of assessing achievement motivation which has been empirically related to various behavioral tasks. McClelland's method of investigating achievement motivation is an extension of Murray's TAT approach. The

Thematic Apperception Test was designed by H. A. Murray and C. D. Morgan for the investigation of needs. This method is fully outlined and its effectiveness evaluated in a subsequent chapter. Since the theoretical basis for the reported study is mainly that of McClelland, his theory is presented in considerable detail.

McClelland's affective-arousal model

McClelland and his associates have chosen affective states as the basis for motives. These affective states may be distinguished by the effects of autonomic activity such as changes in respiration rate or blood pressure. One needs also to distinguish between pleasant or unpleasant feeling states, that is positive and negative affect. At the present time autonomic changes will not serve as a basis for this distinction. Either learned or reflex approach and avoidance behavior is considered useful in distinguishing positive from negative affect (McClelland et al., 1953).

Positive or negative affect is produced respectively by small or large discrepancies between the stimulus and the adaptation level of the organism (expectation). This means that what stimuli will produce affect depends very much on a person's prior adaptation. For example, a loud sound might be disturbing to an individual under normal circumstances but not after several hours at a jet airport. This adaptation level may change with learning so that what yields pleasure and pain will vary as the organism accumulates experience. In other words motives can be formed on the basis of affective changes at any time during life and the expectations on which they are based grow increasingly complex as the

person matures.

It is assumed that a motive involves an affective association. So then we may say that an increase in stimulus intensity provides the basis for a motive only if it represents a large enough discrepancy from adaptation level to produce positive or negative affect; it elicits a motive only if it or the situation producing it has been associated with such affect in the past. Apparently what happens is that certain cues (either in the affective state or in the external conditions producing it) get associated with the affective state so that they can partially redintegrate it on a later occasion. It is this anticipation of change in affective state which is here defined as a motive. In time clusters of expectancies or associations grow up around affective experiences. In this sense, McClelland defines all motives as learned.

Positive and negative motives should be distinguished because of their differential effects on behavior. Negative affect results from too large discrepancies between expectations and events. Thus one may develop expectations as to what a solved arithmetic problem looks like, but may be unable to confirm these expectations at all, or only very partially. The result is negative affect, and cues associated with these activities may be expected to evoke avoidance or negative motives. To develop an achievement approach motive, parents or circumstances must contrive to provide opportunities for mastery which, because they are just beyond the child's present knowledge, will provide continuing pleasure. If the opportunities are too limited, boredom should result and the child should develop no interest in achievement. If the op-

portunities are well beyond his capacities, negative affect should result, and he may develop an avoidance motive as far as achievement is concerned. McClelland employs a practical denotation whereby the symbol *n* is used for need. Thus *n* Achievement is characterized by increased instrumental striving and the hope of success.

How does one account for the development of achievement motivation? A consideration of a motive such as outlined above would place importance on the early years in an individual's life for motive formation. Not only is affect easily aroused in small children but infancy and early childhood also offer opportunity for many strong associations to be formed through repetition (McClelland, 1958 b). Early childhood would seem to be the ideal time to form strong, affective associations which are so general that they will be hard to extinguish. Adequate symbolization is impossible early in life. This condition, along with the irregularity of the conditions of learning, favors generality of learning by making it very difficult for the child to discriminate between when it is appropriate to make a response and when it is not.

Individuals must learn to some extent to do things for themselves --for example, learn to walk, talk and eat by themselves. In the course of mastering these various problems it is highly likely that certain mastery cues (effort, difficulty, incompleteness, etc.) will get associated with affective arousal and will produce in time centrally motivating anticipations of success or failure. Achievement motives probably require for most children some structuring of performance standards, some demands by the parents and the surrounding culture. The child must be-

gin to perceive performance in terms of standards of excellence so that discrepancies of various sorts from this perceptual frame of reference can produce positive or negative affect. Thus, one may speak of an achievement motive in terms of affect in connection with evaluated performance. Whatever the performance, it can give evidence of an achievement motive if there is affect or involvement connected with evaluation of it (doing it well, and so on).

The origin of achievement motivation

Psychologists have noted that certain motives appear to be the result of a certain type of interaction between the child and his parents. Sanford (1956), for example, presents a picture of parents and their discipline as it is related to the authoritarian personality syndrome. The origins of the achievement motive would seem to be determined in a similar manner. Two investigations have assessed the effect of independence training on children's achievement motivation. Winterbottom (1958) has shown that mothers who stress independence for their sons will tend to have sons with higher achievement motivation. The sons with strong Achievement had mothers who expected earlier evidence of self-reliant behavior from their sons, gave more frequent and intense rewards when their sons were successful in these attempts, and placed fewer restrictions on the spontaneous efforts of their offspring toward independence. A follow-up study by Feld (1959) some six years later found the maternal independence training reported by the mothers at the time of the first study was still predictive of the boys' achievement motivations in adolescence.

To produce sons with high n Achievement both parents should set moderately high standards of excellence, and respond emotionally, especially positively, to his performance. It seems reasonable to assume that a strong set of standards is most likely to be learned when both parents agree on standards of excellence and have high aspirations and expectations for achievement. Where agreement between parents is lacking the child is more likely to be confused and the probability of the standards becoming cues for affective arousal is lowered. Rosen and D'Andrade (1959) assessed parent behaviors in semiexperimental situations. Forty boys with extremely high and forty with extremely low n Achievement scores were selected from an original sample of 140 subjects. The experimenters took several achievement tasks into the homes of these children and required the boys to perform these while their parents were present, and the parents' behaviors during these testing sessions were observed and rated. Rosen and D'Andrade (1959, p. 216) report evidence that:

The parents of a boy with high n Achievement tend to have higher aspirations for him to do well at any given task, and they seem to have a higher regard for his competence at problem solving. They set up standards of excellence for the boy even when none is given, or if a standard is given will expect him to do 'better than average'. As he progresses they tend to react to his performance with warmth and approval, or, in the case of the mothers especially, with disapproval if he performs poorly.

With reference to the relative roles of father and mother Rosen and D'Andrade (1959) suggest that in order for high n Achievement to develop, the boy needs more autonomy from his father, than from his mother. They found fathers of high n Achievement boys to be on the

average less rejecting, less pushing, and less dominant. Also they note that achievement training contributes more to the development of Achievement than does independence training. While the role of independence training appears to be less influential than that of achievement training, it can perhaps be best understood in the context of what appears to be a division of labor between the fathers and mothers of high Achievement boys. Rosen and D'Andrade show evidence that fathers and mothers both provide achievement training and independence training but that the fathers seem to contribute much more to the latter than do the mothers. "Fathers tend to let their sons develop some self-reliance by giving hints rather than always telling 'how to do it'" (Rosen and D'Andrade, 1959, p. 216).

Since the role of independence training in the development of Achievement has been shown to be so important, a closer look at the meaning of independence training is in order. That writers use the word, independence, in different ways is indicated by Hartup (1963, pp. 333-334). "Frequently, the term independence denotes simply the absence of dependence. Such usage places dependence and independence at opposite poles on a single behavioral continuum. . . . Some writers, however, argue that dependence and independence should be conceived separately. Independence, it is suggested, should refer to behavior which is self-reliant but also self-assertive." The term, independence training, as it is used in both the Winterbottom (1958) and the Rosen and D'Andrade (1959) studies means something more than lack of dependence. The items (e.g., "to try hard things for himself without asking for help") used

by Winterbottom to assess the extent to which mothers stressed independence training all make reference to relying on one's self. Rosen and D'Andrade also indicate that independence training refers to the development of self-reliance.

McClelland (1953, p. 279) puts forth the hypothesis that achievement motivation develops out of parents' concern that children "stand on their own feet" rather early in life and learn to do things for themselves. Direct confirmation of this hypothesis was obtained by correlating n Achievement scores of male American college students with their own ratings of their parents' behavior toward them on several different dimensions, namely, Democratic - Autocratic, Acceptance - Rejection, Indulgence and Casualness. The correlation for the acceptance - rejection dimension was significant, being .49 for the father, .33 for the mother, and .48 for both parents combined. In other words, the higher the n Achievement score the more the student tended to rate both parents, but particularly the father, rejectant. This suggests that the son was either forced to stand on his own feet by his parents or thought he was forced to stand on his own feet (and therefore "rejected").

As indicated earlier, Rosen and D'Andrade found fathers of high n Achievement boys to be on the average less rejecting. It is suggested that this finding and the finding by McClelland cited above are not contradictory but rather represent a difference in the use of the term rejected. In the Rosen and D'Andrade study, parents' behaviors were observed and rated. The fathers expected their sons to rely on themselves but showed approval when they performed well. This type of behavior on

the part of the father was termed less rejecting and less dominant by the observers. The study reported by McClelland (1953) represents a difference in that the students themselves rated their parents' behavior. When they rated the father as rejectant, this was interpreted to mean that the father expected them to "stand on their own feet" and learn to do things for themselves. It would seem that the same type of behavior is involved but is labelled differently depending upon the position from which it is viewed.

A parents' own personality often determines his attitudes and reactions to his child's behaviors. Both a parent's general attitude and his own personal needs have been found to be predictive of his child-rearing practices. Regarding the specific area of achievement development, one recent study (Katkovsky, Crandall, and Preston, 1964) reports that parents' orientations toward their own achievements may influence their behaviors with their children in everyday achievement experiences. For example, the greater the value the fathers placed on their being intellectually competent themselves, the more likely they were to participate with their elementary-schoolage children in intellectual pursuits, to instigate their children toward intellectual achievement activities and accomplishments, and to react strongly to their children's achievement efforts. Similar relations were found for mothers, except these were more frequently expressed in interactions with their daughters than with their sons. Also, the parents' own achievement orientations often found expression in their actions with their offspring consistent with prevailing cultural stereotypes of appropriate sex-role behaviors.

As already noted, the importance of group membership for personality development has been demonstrated many times. Perhaps the most important of these groups is the family whose strategic role in the socialization process has led investigators to study the nexus between child-rearing practices and motivation formation. Thus Winterbottom (1958) examined the relationship between independence-mastery training and achievement motivation and found that achievement motivation is strongest among boys whose mothers (all of whom were middle-class) expected relatively early indications of self-reliance and mastery from them. Support for this finding is given by Rosen and D'Andrade (1959) as outlined earlier.

Since many socialization practices are known to be dissimilar between social groups, it might be expected that independence training practices would also differ. A study by McClelland et al. (1953) later replicated by Rosen demonstrated this to be the case: middle-class parents place greater stress upon independence training than lower-class parents. The deduction from this finding that classes differ in their level of n Achievement was shown to be correct by Rosen (1956) who found that, on the average, n Achievement scores for middle-class adolescents were significantly higher than those for their lower-class counterparts.

Obviously we are talking now of what might be called "extrinsic" factors which have an effect on n Achievement because they modify child-rearing practices. While the number of such factors is potentially very large, a few might be seen to directly affect child-rearing. Stratification position, or social class belonging, has been empirically linked

with achievement motivation--presumably through its effect on child-rearing practices.

Since socio-economic status is clearly an "extrinsic" factor which is only indirectly connected with n Achievement development in boys, it follows that theoretically it should be quite possible to find situations where the lower classes might have higher n Achievement than the upper or middle classes. On the whole, however, one would expect that social class status would be an imperfect indicator of n Achievement level, since it does not group occupations together in terms of their motivational requirements. Miller and Swanson (1958) have proposed an alternative way of classifying occupations that should relate more directly to n Achievement levels. They attempted to study the child-rearing practices of two types, the entrepreneurial and the bureaucratic.

Entrepreneurial and Bureaucratic integration setting

The entrepreneur is a man who has to judge how well a product or service will sell and what resources must be spent to produce and market it. His income depends on the accuracy of these judgments. Miller and Swanson (1958), for purposes of their study, classified a family as entrepreneurial if any one of the following characteristics was met by the husband: (a) he was self-employed, (b) he gained at least half of his income in the form of profits, fees, or commission, or if he (c) worked in an organization having only two levels of supervision, a small-scale organization. Also Miller and Swanson decided to classify a family as relatively entrepreneurial in its integration setting if the wife or

her husband were (d) born on a farm or were (e) born outside the United States. They do acknowledge that their assignment of the foreign-born to an entrepreneurial classification is speculative.

For purposes of the present study students were assigned an entrepreneurial classification only if the father met one of the first three criteria. (Description of the sample used in this study is made later. Only students of Canadian-born parents were included.)

Miller and Swanson include under the label of entrepreneur all persons who, relatively more than the population at large, may be expected to have their lives strongly affected by individuated-entrepreneurial values. Their conception thus is much broader than the one employed for this study. They felt that those born on the farm are more likely to have the outlook of small business men. Further, foreign birth was considered a sign of entrepreneurial experiences and expectations since some of the foreign-born certainly came from rural backgrounds, and since almost all of them might be assumed to come from countries that were strikingly less patterned as welfare-bureaucracies than is the social structure of the United States.

Both of these groups, the foreign-born and the farm-born gradually lose their values as they come to work in, and participate in, welfare-bureaucratic organizations and to live in a society which, increasingly, promotes the values of such organizations. Making this assumption, it is felt that neither foreign nor farm birth of the father is itself a sufficient criterion for the assignment of a family to an entrepreneurial setting--more especially when one considers the speculativeness of Miller

and Swanson's interpretation of the implications of foreign and farm birth and the assumptions underlying this interpretation as outlined above. As indicated later ethnic background has been related to level of achievement motivation. This finding also influenced the decision to take the narrower concept of the entrepreneur as a person who is self-employed and whose income depends heavily on the outcome of the risks he takes--that is, excluding the foreign-born as a possible entrepreneur and thus avoiding the inclusion of subjects of different ethnic backgrounds in this study. The criterion of a minimum time of employment in any one of the two occupational settings was also employed. The use of this criterion is discussed later.

The entrepreneur, then, is characterized by risk taking and is dependent on the accuracy of his judgments. Such experiences are an important part of the kind of world in which his children will have to live and for which they are trained. Further, such experiences determine many of the values and expectations of the parents with the result that they treat their children in terms of those values and expectations. With reference to achievement motivation, the hypothesis is that entrepreneurial and bureaucratic experiences of the parents influence child-rearing practices in such a way as to have a differential effect on the development of Achievement.

If indeed this can be shown to be the case, one would have to assume that the entrepreneurial or bureaucratic experiences have been prevalent long enough to influence parental values and expectations. With this in mind, a further criterion was used when classifying families as

either entrepreneurial or bureaucratic. It was necessary for the father to have spent a certain number of years in a particular occupational setting. This was, it is hoped, a safeguard against the assignment of a family to a bureaucratic classification when its life history has been entrepreneurial or vice versa.

What is meant by a bureaucracy and what criteria guided Miller and Swanson's assignment of a family to a bureaucratic integration setting?

"The type of organization designed to accomplish large-scale administrative tasks by systematically co-ordinating the works of many individuals is called a bureaucracy" (Blau, 1956, p. 14). Most large organizations are confronted with complex administrative problems. Hence bureaucracy is not confined to the military and civilian branches of the government but is also found in business, unions, churches, universities, etc.

Blau notes four factors--specialization, a hierarchy of authority, a system of rules and impersonality--as being basic characteristics of bureaucratic organization. Miller and Swanson drew mainly upon the characteristics of a hierarchy of authority for their classification criteria. A family was classified as bureaucratic if the husband (a) worked for someone else in an organization of at least moderate complexity (three or more supervisory levels), (b) obtained most of his income from a salary or wage and (c) for his income and job security did not depend in as large a measure as the entrepreneur on his taking frequent risks.

The Miller and Swanson study was concerned with class differentials of child-rearing practices. In as much as these practices relate to the

acquisition of the achievement motive, it is felt worth while to briefly review the findings of this study. Miller and Swanson found in the Detroit area no significant difference in child-rearing practices between mothers of middle and lower-class status. With regard to integration setting (defined in the following chapter), they found that the lower classes of different integration do not differ significantly in child-rearing techniques. However, differences were significant between the different integrations within the middle-class. The entrepreneurial middle-class mothers are more likely than those in a bureaucratic integration to use practices which emphasize self-control in training children. They conclude that the entrepreneurial middle classes show greater devotion to activity and independence and state that "The bureaucratic situation strips from the worker much of his potentiality for striving and achievement" (Miller and Swanson, 1958, p. 101).

While one would expect that the entrepreneurial families should stress the self-reliant achievement training that produces n Achievement, the evidence presented by Miller and Swanson on the point is not clear cut. Most of the information they collected in interviews with these families is not directly relevant to what produces n Achievement. The one item that is relevant ("agree that a child should be on his own as soon as possible to solve his own problems") did not show a significant difference in the expected direction. The entrepreneurial families agreed more (48%) than the bureaucratic families (41%) but the difference was small and not significant (Miller and Swanson, 1958, p. 241).

Miller and Swanson assume that a particular environmental condi-

tion (here the entrepreneurial role) will produce the type of child-rearing that produces the type of child best suited to functioning in that environment. One might further expect that the entrepreneurial setting promotes more of the attitudes or values conducive to the development of high n Achievement. Admittedly both assumptions are to be made with caution. Nevertheless, whether this is indeed the case cannot be settled by logic but rather by empirical testing.

Place of residence and the achievement motive

A review of the literature indicates very little reference to the relationship of the factor, community of residence, and the achievement motive. Most of the research has been concerned with determining the applicability of the method of assessing achievement motivation for different groups, and with the correlation of n Achievement scores with certain performance tasks. The study by Veroff, Atkinson, Feld and Gurin (1960) does, however, give some evidence of an existing relationship. In a nationwide assessment of motivation they found a greater concentration (for both men and women) of high achievement motivation scores in small towns and rural areas than in larger communities. This survey dealt with a sample of 1,619 adults (21 or over), a cross-section of Americans--men and women, old people and young people, blue-collar workers and white-collar workers. An individual administration rather than the usual group administration was employed and the set of TAT pictures used to assess achievement motivation was different from the set of four used in the present study. With reference to the achievement motivation of the male subjects of the sample, the percentage of high scores in the metropolitan

areas was 48 (N = 86) compared with 53 per cent in the rural areas (N = 225). Since the authors of this study reserved the problem of statistical significance, this difference could not be considered reliably different. A test of significance for two independent proportions was applied by the writer and the difference was found not to be significant ($p > .20$). However, Veroff et al. conclude that "these differences may have important implications for the thesis that the type of community one lives in can determine the development of certain motivational interests. For example, one might want to say that a consequence of living in smaller communities is the development of a heightened interest in (achievement) and yet there remains one possibility that such an interpretation is in error. Motivation can play a large role in determining the kind of community people live in . . ." (1960, p. 26).

Berelson and Steiner (1964) summarized the major behavioral differences between urban and rural residents (mainly from American studies). They report among other findings, more political and religious tolerance in the cities than in rural areas; more change in the cities, more stability in the country; higher level of education in the cities than in rural areas. Their list does not include one item that was long thought to distinguish urban from rural life--namely, the relative absence of close personal relations in the city. "Indeed, in the United States, the spread of machinery to the farm, the automobile, and the mass media of communication are diminishing the traditional social differences between city and country" (Berelson and Steiner, 1964, p. 607).

Bertrand also notes the increasing similarity between rural and

urban values. "At present the trend of rural America is away from the traditional values that have so long characterized it and toward the more rationalistic values associated with the 'urban middle-class' . . . Rural family values are changing, following the pattern established by the urban families, and family relationships are becoming more 'contractual' and impersonal in nature" (1958, p. 46).

Many studies have turned up evidence that the difference between rural and urban families is gradually being narrowed in the United States. It is seen in the decreasing size of the rural family, in the weakening of the bonds that have held the rural family together, and in the increasing rural acceptance of urban attitudes and values.

With the exception of the trend reported by Veroff et al. (1960), one can only speculate concerning the effect of place of residence upon the development of achievement motivation. Lacking knowledge of child-rearing practices in urban and rural areas, especially with specific reference to Canada, one can best set out in an exploratory manner, being guided by findings in other countries, most similar to Canada in their social integration.

Evidence suggests that the rural and urban areas are becoming more similar with respect to attitudes and values. This being so, it would seem unlikely that large differences exist in respective child-rearing practices. Any differences existing would most likely be found between the extremes of rural and urban living.

CHAPTER III

VARIABLES, DEFINITIONS AND HYPOTHESES

Essential Variables

The hypotheses under investigation were concerned with three variables. For the purpose of this study these were defined as follows:

Integration setting - a characteristic way (i.e., on the basis of father's occupation) in which people are integrated with others in their society.

Entrepreneurial integration setting - classification to which families are assigned if the father is either self-employed or earns at least half of his income in the form of profits, fees, or commissions.

Bureaucratic integration setting - classification to which families are assigned if the father gets most of his income from a salary or wage and works for someone else in an organization of three or more supervisory levels. The definition of these types of integration setting is largely that of Miller and Swanson (1958).

Place of residence - the community (a functionally related group of people living in a particular geographic locality) in which an individual is established. This community was classified as urban or rural depending on the size of its population. The rural population for this study included persons living in small towns of 3,000 inhabitants or less as well as those persons living on farms surrounding the small towns.

The urban population included persons living in places of 300,000 inhabitants or more.

Achievement motivation - (The motivation theory underlying the hypotheses of the study is derived from research by David McClelland and his associates.) A motive is defined in terms of an anticipation of an affective change (i.e., an anticipation of an increase or decrease in pleasure or pain). The achievement motive then can be identified on the basis of the individual's expectation of success. Achievement motivation is the desire to perform competently in achievement situations, a concern with doing one's best.

Other authors (e.g., Edwards) have called their variable "n Achievement" even though it is measured in a direct way. Whenever mentioned in the present study "n Achievement" refers to achievement motivation as considered by McClelland et al. (1953), unless otherwise indicated.

Vitiating variables and their control

Sex

McClelland (1962, p. 93), on the basis of a study by Veroff to assess the generality of the n Achievement measure, concludes that the method cannot be applied to women without some additional assumptions. Veroff found no significant change in n Achievement score for girls following ego-involvement. The only method of arousing an achievement motivation in U. S. women which has influenced their n Achievement scores is reported by Field. He defined success and failure largely in sociometric terms as "social acceptability" (McClelland et al., 1953).

While n Achievement has proven to be an important determinant of men's achievement behaviors in many achievement situations, this has seldom been found to be true for women. However, Veroff and Wilcox and Atkinson (1953) were able to establish a positive relationship between n Achievement score and performance on Anagrams. This represents the first empirical evidence of the validity of the n Achievement scoring method for obtaining a measure of the achievement motive in women. Nevertheless, in recent years--perhaps because of the lack of evidence for the validation of the n Achievement measure for women--most research involving n Achievement has exclusively employed males as subjects. The present study was designed to investigate the achievement motivation of male students only.

Religion

Religion has been theoretically linked with the achievement motive. As previously stated, Winterbottom (1958) established a link between the child-rearing practice, independence training, and the desire or motive to do well. With reference to this finding, McClelland (1955) drew a parallel between independence training and the effect of a Protestant upbringing. Weber's (1930) description of the Protestant personality-type is quite similar to the exhibited behavior of a person with high achievement motivation. The Protestant revolt affected a shift from a reliance on an institution to a greater reliance on the self.

In the United States early results suggested that Protestants favor earlier independence and mastery training than do various Catholic groups (McClelland, 1961, p. 358). People are undoubtedly moving away from

traditional Catholic attitudes towards a more modernistic outlook. Whether religious differences in achievement motivation presently exist in North American culture is speculative. The influence of this factor was not tested in this study. Instead only subjects who hold membership in a Protestant religious group were included in the sample.

Ethnicity

Rosen (1959) reports that cultural and psychological orientation towards achievement varies, on the average, with ethnic and racial background. Eastern European Jews, Greeks, and native-born white Protestants were found to have higher achievement motivation and greater value orientation towards achievement than French-Canadians, South Italians, and Negroes in a group of sixty-two communities in four North Eastern States. Strong in a study in Alberta (1963) discovered almost no significant difference in achievement orientation due to ethnic background or birthplace of mother and father. However, there was a strong association between low achievement orientation and being Indian or Metis.

In the present study an effort was made to control ethnic background by including only those students whose parents were both born in Canada (with the exclusion of students of Indian or Metis parentage).

Socio-economic status

Overall achievement motivation has been shown to be related to social values and child-rearing practices and consequently to social class, ethnic, religious, and other subcultural groupings which vary along these dimensions. There is ample evidence to suggest that child-rearing

practices differ among social classes. Strong (1963) found in an Alberta study that achievement orientation and levels of aspiration are highly related to the social class position of the individual. Rosen (1956) found the McClelland measure of n Achievement was positively associated with social class. He demonstrated that, on the average, n Achievement scores for middle-class adolescents were significantly higher than those for their lower-class counterparts.

The present study investigated the effects on achievement motivation of integration setting and place of residence only as they operate within the middle-class.

Grade level

There is evidence to suggest that rate and level of drop-out from school is different in urban and rural areas. Undoubtedly many school drop-outs have lower intelligence quotients than the average of those who finish school. Although level of ability is one factor, Jersild suggests, "it is not the only factor, and in many instances it is not the deciding factor" (1963, p. 334). The writer would propose that level of achievement motivation is another important factor affecting drop-out rate.

Testing for the present study was done at the grade eight level. Since drop-outs from school occur largely beyond the grade eight level, a consideration of the implications for this study of the differential rate between rural and urban areas was avoided by testing at this level.

Intelligence

Reported evidence of a relationship between intelligence and n

Achievement seems to be conflicting. "Little interest has been shown in possible relationships between intelligence and achievement motivation by American workers. McClelland et al. (1953) found no relationship between n Achievement scores and scores on the Otis IQ or the Iowa Silent Reading Test" (Robinson, 1965, p. 99). Crandall would support this view: "It is possible that the achievement motivation of children may also be associated with their intelligence-test performances. At the moment, however, there is little evidence to suggest that intelligence and achievement motivation are necessarily correlated" (1963, p. 440). On the other hand, Caplehorn and Sutton state: "The relationship between n Achievement and intelligence is well established by McClelland and others. It has been shown that strong motive to achieve success affects scores on group intelligence tests. In the type of speed test commonly used, this effect is likely to be particularly marked" (1965, p. 47). Murstein puts forth a similar conclusion: "The studies reviewed also indicate that IQ or aptitude scores are related to n Achievement. Although in several studies differences between HA and IA could not be accounted for solely by intelligence scores, there seems little doubt that the intelligence factor contributes significantly to the n Achievement score" (1963, p. 96).

No deliberate effort was made in the present study to control for the effects of intelligence. However, it is felt that the rural and urban samples are comparable with respect to this factor. The samples are homogeneous along the dimensions of ethnic background, sex, religion, and socio-economic status. Further, initial testing was carried out in all the Grade VIII classes of the schools visited (three in the urban area

and three in the rural area), with the exclusion only of opportunity room students. Thus, the range of intelligence should be quite similar within the rural and urban samples. It is further suggested that sample size would minimize spurious results which might be attributable to a smaller sample.

Hypotheses

The following two hypotheses were tested:

Hypothesis 1: The level of achievement motivation of students from an entrepreneurial background is higher than that of students from a bureaucratic background. Hypothesis 1 was of major interest in this study.

Hypothesis 2: The level of achievement motivation of rural students is higher than that of urban students.

CHAPTER IV

TEST INSTRUMENTS USED

n Achievement measure

Animal psychologists have successfully assumed that motives can be aroused normally by deprivation. Clinical psychologists from Freud to Murray have found fantasy of immense practical value in developing the motivational theory of personality. McClelland and his associates in trying to devise a method of measuring motivation thus attempted to arouse human motives experimentally and to measure the effects on fantasy.

Earlier explorations by Sanford (1936, 1937) uncovered suggestive evidence of the influence of hunger on imaginal and perceptual processes. Subjects were required to interpret ambiguous pictures. (This technique is a form of the TAT). For all subjects the number of food responses obtained before a meal, was twice as great as that obtained after a meal. It was concluded that food responses, which are assumed to be objectifications of food images, depend upon the strength of the need for food. This result was taken as evidence in support of the hypothesis that imaginal processes depend upon the needs of the organism. In a further experiment (1937) Sanford found that increases in food responses during the first five hours after taking food is as marked as the additional increase when period of abstinence extends to 24 hours. Sanford felt that a process of "suppression" was in operation. "That this 'holding in check' of the need

acted to prevent some subjects from giving food responses seems not unlikely" (Sanford, 1937, p. 158). Allport, however, (1962) interprets Sanford's finding in an almost reverse manner. He accounts for this decline in food responses in longer periods of fasting by the suggestion that the motive itself becomes completely conscious and is not repressed. He suggests that "unless a motive is repressed it is unlikely to affect distinctively the perception of, and response to, a projective test" (Allport, 1962, p. 167). As further evidence for this hypothesis Allport cites wartime research conducted with 36 conscientious objectors who lived for six months on a semistarvation diet. While these men were clearly obsessed by their food drive, and all their energy seemed directed toward its fulfillment, on projective tests the need failed to appear.

Despite such controversy about the use of projective techniques (as opposed mainly to more direct measures) in the measurement of motivation, McClelland and his associates have experimented extensively with the use of such a technique and a massive body of research using the McClelland measuring instrument has accumulated during the last decade.

As stated, McClelland and his associates first attempted to arouse human motives experimentally. There are several standard laboratory procedures for producing achievement orientation which are usually grouped together under the heading of "ego-involvement". They have in common the attempt to orient the subjects around success in some task which is or should be of great importance to them.

McClelland's routine procedure involved asking a group of subjects to write brief five-minute stories in response to each of four pictures

exposed for twenty seconds on a screen in front of the group. The stories were written around four questions spaced on an answer sheet. There were four slides in all, two of which came from the Murray Thematic Apperception Test and two of which were made up especially for this test. They suggested respectively a work situation (two men working at a machine), a study situation (a boy seated at a desk with a book in front of him), a father-son situation (TAT 7BM), and a young boy possibly dreaming of the future (TAT 8BM).

Stories written by subjects whose achievement motives had presumably been aroused were compared with those written by subjects under normal conditions. Certain differences were apparent. The stories written under 'aroused' conditions contained more references to 'standards of excellence' and to doing well, with respect to the standards. Thus any imagery (e.g., statement in the story) which suggests competition with a standard is achievement related and may be used as means of detecting the presence of the achievement motive.

It was assumed that the more such thoughts an individual had under normal conditions, the stronger his motive to achieve must be, even in the absence of special instructions and experiences designed to arouse it. Under normal testing conditions, the pictures used to elicit stories are sufficiently ambiguous to evoke a variety of ideas. If someone, however, in writing his stories consistently uses achievement-related ideas of the same kind as those elicited in everyone under achievement "pressure", then he would appear to be someone with a "concern", or a "need" for achievement. Thus a simple count of the number of such achievement-

related ideas in stories written under normal testing conditions is taken to represent the strength of an individual's concern with achievement.

The appearance of achievement fantasy in a thematic story is a joint function of three variables: "(a) cues in the everyday environment and in the relatively autonomous thought processes of the individual, (b) specific experimentally introduced cues, and (c) controlled cues in a particular picture" (McClelland, et al., 1953, p. 196). The person and his earlier experiences thus constitute one factor, the experimental setting another, and the stimulus-pull of the picture the third. By using a standard set of pictures given under neutral instructions it is hoped to control the pictorial and background cues eliciting the achievement motive. Variations in strength of manifestation of the achievement motive in the thematic productions are then held to be the result of individual differences in motive strength.

There is much conflicting evidence regarding the utility of thematic pictures in the measurement of achievement motivation. In general, McClelland and his associates have reported findings supporting the use of thematic pictures in the assessment of achievement motivation. On the other hand Lazarus and his colleagues have found either no relationship, or, an inverse relationship between achievement imagery and achievement behavior (Murstein, 1963). It seems apparent that the Achievement score is heavily influenced by the number and kind of pictures used. Probably some of the differences in reported studies stem from the use of different cards and a lack of knowledge of the stimulus value of these cards with regard to achievement. Murstein states:

"Studies are not comparable, however, unless the cards used have comparable stimulus-pull and further, the use of inappropriately structured cards may result in a lack of differentiation between high and low achievers either because the cards are so insensitive to achievement that little achievement imagery is obtained from either group, or because they are so strongly achievement structured as to compel an achievement response regardless of subjects' achievement orientation" (1965, p. 286).

In the present study the achievement motivation of subjects was assessed using the four thematic cards used originally by McClelland et al. (1953) and subsequently in many studies involving the measurement of achievement motivation. Subjects were asked to write brief stories in response to each of the four pictures. The stories were written around four questions spaced on an answer sheet. Appendix A contains a description of the pictures, instructions to the students, and the questions.

McClelland (1958 a) has commented on the equivalency of picture cues for different groups and states that these four pictures have produced results in Germany, Brazil, Italy, and Japan which are comparable in many respects to those found in the United States. He has, however, made very little, if any, comment on the strength of the stimulus-pull of the cards. A recent study by Caplehorn and Sutton (1965) throws some light on this characteristic. They classified McClelland's four pictures according to strength of stimulus-pull. The two TAT pictures, in comparison with the other two pictures (non-TAT) were found to be low-cue pictures. They report a substantial difference between the achievement scores of the two sets of pictures and suggest that the two sets of

scores represent different modes of response.

Murstein (1965) has constructed a scaled set of thematic cards. Thirty-six thematic cards (among which were McClelland's four cards) were judged with regard to achievement. The card showing a young boy dreaming of the future (TAT 8BM) was judged as high-achievement, two men working at a press (non-TAT) also was moderately high, whereas the father-son situation (TAT 7BM) and the card showing a study situation (non-TAT) were judged to be medium-achievement pictures.

While the use of low-achievement pictures along with medium and high-achievement pictures would most likely be more differentiating, it is felt that McClelland's four pictures represent a considerable extent of the range of achievement and should be successful in differentiating different achievement-oriented groups.

Reliability of the n Achievement measure

In the first place reliability refers to the accuracy with which the same (or different) readers will score the thematic stories.

McClelland reports high agreement on individual n Achievement scores.

The correlation is .95 between n Achievement scores obtained on two different occasions by two judges working together. One judge, after experience with the system for three days, has obtained a correlation of .92 between his scores and those obtained by another judge more experienced with the system. (1955, pp. 404-405)

Gulliksen speaking generally about recording reliability states: " . . . we should strive for a reader reliability over .90 if it is possible to achieve this level" (1950, p. 212).

In the second place reliability refers to the agreement of scores

obtained on one occasion with those obtained on another similar occasion (test-retest reliability). On the whole reliabilities reported by McClelland and his associates are low. McClelland (1955) reports that a test-retest correlation for two three-picture measures taken a week apart was only .22 (not significant with $N = 40$). However, the two measures agreed significantly (72.5%) in placing subjects above or below the mean on the two occasions, and the split-half reliability for a six or eight-picture test runs over .70. "On the whole, the n Achievement measure appears adequate for classifying individuals into high and low achievement groups, or at the most into high, middle and low achievement groups, but not for finer discriminations or for individual testing purposes" (McClelland, 1955, p. 406).

Other reported test-retest reliability estimates for n Achievement range from 0.26 (Krumholtz and Farquhar, 1957), to 0.54 (Haber and Alpert, 1958). Murstein (1963) has summarized the findings of several studies concerned with assessing the reliability of the n Achievement score. He reports that, "overall, there appears to be a very low but significant correlation between test and retest." Murstein suggests that several factors may influence the reliability of the n Achievement measure (1963, p. 141). ". . . findings suggest that a memory factor may account for much of the variance in the reliability coefficients reported. . . these results (also) indicate that the content of the TAT is strongly influenced by situational factors. Yet another factor is the 'measurement error'. By this I mean that the act of giving a particular theme will to some degree lessen the likelihood of giving a very similar theme again."

McClelland (1958 a, p. 20) has also noted the influence of this 'measurement error' in reducing test-retest reliability. ". . . since high test-retest reliabilities are not usual--at least for associative, involuntary measures of motivation--a more likely hypothesis is that making a certain associative response tends to introduce resistance to giving it again." With reference to the low test-retest reliability of the n Achievement measure, McClelland further points out that it is hard to replicate testing conditions with such a projective technique. He argues that instead "one can rely on other criteria, such as validity, for inferring stability of motivational dispositions indirectly."

Validity of the n Achievement measure

One would hypothesize that people with high n Achievement scores show evidence of better learning and performance. Several studies have been designed to test this hypothesis. Lowell administered a three-picture form of the TAT n Achievement Test to a group of male college students and then asked them to work on a twenty-minute Scrambled Word Test which required them to rearrange a nonsense series of letters until they had constructed a meaningful word. McClelland summarizes the results: (1955, p. 407) "There is definite and statistically significant evidence for superior learning in the high as compared with the low n Achievement group." Many studies could be cited relating n Achievement with level of aspiration, with perception and memory (McClelland, 1955, pp. 408-410), and with College grades (McClelland, 1953, p. 237). Measured by McClelland's procedure high need achievement has been found to be correlated positively with: (as summarized by Berelson and Steiner, 1964,

p. 260) "sustained effort in a laboratory task; maintenance of independence in a situation that tends to evoke conformity; ability to perceive camouflaged, or embedded, figures; and endurance and probability of reaching correct solutions to problems."

It would appear that the *n* Achievement score may be meaningfully related to various behavioral tasks. One cannot, however, report such positive results with reference to the more traditional validity checks. McClelland (1955) reports no significant relationship between imaginative *n* Achievement score and either a psychiatrist's judgment of *n* Achievement or a person's own judgment of his *n* Achievement intensity.

Bendig, among others, has investigated the relationship between the McClelland projective measure of need achievement and Edwards objective measure of need achievement. Edwards Personal Preference Scale (EPPS) gives a self-descriptive measure of need achievement (also called "*n* Achievement"). The correlation, reported by Bendig (1957) between the projective and objective measures of need Achievement was .11 which is barely significant at the .10 level of confidence. "The small correlation between the two measures of 'need Achievement' suggests either that each scale measures a different type of 'need Achievement', or that the low stability reliability of McClelland's scale results in considerable attenuation of the relationship" (Bendig, 1957, p. 354).

McClelland suggests the reason for the lack of correlation between the two kinds of measures may lie in the failure of the self-descriptive measure (e.g., EPPS) to reflect differences in motivation and only motivation. If one assumes that the fantasy or projective measure of

motivation is "purer", then, as McClelland suggests, "the lack of correlation could be explained if it can be shown that the choice or self-descriptive measures are influenced by extraneous factors. And they obviously are. By definition they involve choice, and choice can easily be influenced by sets and intentions" (1958 a, p. 25).

The consistency of n Achievement

Longitudinal research is necessary in order to determine the stability of children's motivations as they mature. The Fels Research Institutes' longitudinal study has followed the same children from birth to eighteen years of age. In respect to children's n Achievement, moderate but significant correlations were found between the number of achievement responses the children gave to TAT pictures at eight years of age, and those given by the same subjects when they were eleven and fourteen years of age (Kagan and Moss, 1959).

A recent study by Feld also related to the consistency of n Achievement over time. This follow-up study of the sample of children originally used in the Winterbottom investigation was discussed in a previous chapter. Winterbottom assessed the n Achievement of boys when they were eight, nine, or ten years of age. Feld (1959) retested these same subjects six years later, and a correlation of .38 was obtained.

Measure for socio-economic classification

Sociologists rarely agree about the precise meaning of the term "social status". In recent years it has been generally agreed that a combination of factors such as activities, occupation and material wealth

establish one's socio-economic status level.

Earlier researchers in this field have demonstrated the usefulness of an occupational scale in social stratification measurement. An objective occupational scale suitable for use in Canada was developed by Blishen (1958) on the basis of national census data. He selected 343 occupations and calculated their mean income and number of years schooling required. The two scores were standardized and combined with equal weighting to form the Canadian Occupational Scale--a scale ranging from thirty-two (hunters and trappers) to ninety (judges) with a mean of approximately fifty and a standard deviation of ten. According to Blishen, this scale appears to give predominant weight to the amount of responsibility involved and the degree of training required.

Empirical justification for the use of such a scale is seen in the correlation of .94 between Blishen's Scale and Hatt's 'National Opinions Research Centre Index'. Moreover, Blishen found a mean correlation of .85 between his Canadian index and similar scales standardized in Great Britain, New Zealand, Japan, and Germany by a variety of methods. (Elley, 1961, p. 57).

Many researchers (e.g., Gough, 1949) have suggested that occupation is only one of the factors contributing to social prestige. Gough produced a new "Home Index" scale "based largely upon a re-analysis and re-working of items in the Sims Score Card and The American Home Scale, with the addition of certain original items" (1949, p. 53). This new index correlated .88 and .82 with the two scales on which it was based, and .65 with a measure of occupational status.

Elley adapted the Gough scale for use in his 1961 study, in order to supplement the occupational index. The final Home Index, containing

14 items from the original Gough scale and six new ones, is based on a total of 20 points. Elley calculated the reliability coefficient for the modified scale using the split-half method and found it to be .77 on his Edmonton sample ($N = 432$). He found also that the new Home Index scale correlated .61 with Blishen's Occupational Scale.

Both the Blishen Occupational Scale and the adapted Home Index scale were used for the purpose of selecting students for the present study. The Home Index scale incorporated with a biographical questionnaire is shown in Appendix B.

Biographical Questionnaire

A biographical questionnaire was designed to gain information necessary for the selection of the sample and the assignment of subjects to particular sub-groups. This questionnaire is shown in Appendix B. Questions four to nine inclusive deal with information required for the classification of the family as bureaucratic or entrepreneurial.

Because of the personal nature of the questions in the Home Index scale, school officials felt that the information should be gained in such a way as to make impossible a personal identification. Thus a numbering system was used. While the accuracy of the information obtained is speculative, the writer feels confident that the students in most, if not all, cases answered all questions as honestly and completely as they were able. For the urban sample, the reported father's occupation was checked with the school's cumulative record files. In all cases where such information was complete, the reported occupation concurred with that recorded in the cumulative files.

CHAPTER V

EXPERIMENTAL DESIGN AND PROCEDURE

Sampling Procedure

A method of purposive sampling was employed in the selection of the sample. Questions of cost and practicability precluded the use of simple random sampling. Considerable investigation of areas of Edmonton and of counties and school divisions of Alberta had to be done to allow for the control of possible vitiating factors and at the same time permit the selection of a fairly large sample within practical limits of time and cost. Thus three Junior High Schools in the city of Edmonton were chosen to provide a suitable urban sample. After a careful survey of the distributions of ethnic and religious groups within the counties, it was decided that the County of Red Deer would be able to best supply a rural sample for the study.

The method of sampling had to be considered when choosing the methods of statistical analysis for the data. Since, even in well-planned research, some uncontrolled variables are left to produce changes in the dependent variable, significance tests are usually applied to research findings. However, many researchers (e.g., Stuart, 1962) assert that unless random sampling methods are used, there is absolutely no basis for the use of inferential processes. Garrett (1960, p. 207), on the other hand, states that "random sampling formulas apply more or less accurately to purposive samples."

The application of statistical tests of significance to data

acquired from non-probability samples undoubtedly represents a controversy. Justification of this practice is often subtle. "Investigators postulate hypothetical populations of which the study samples are, to all intents and purposes, probability samples" (Selltitz, Jahoda, Deutsch and Cook, 1963, p. 542).

The present study was carried out on a well-defined section of the student population of Alberta. This sample will be considered as a probability sample of a hypothetical population to provide statistical tests of significance for the evaluation of the findings. As Selltitz et al. (1963) point out, the properties of this hypothetical population cannot be specifically defined. A careful consideration of the defining properties of the sample should, however, precede any generalizations made.

The sample

The sample consisted of grade eight middle-class boys who hold membership in a Protestant religious group and whose parents were both born in Canada (with the exclusion of students of Indian or Metis parentage). This sample was stratified along the dimensions of place of residence and integration setting.

The urban sample was drawn from the grade eight male population of three Junior High Schools in the city of Edmonton. The rural sample was drawn from three small towns in the County of Red Deer: Innisfail, Bowden, and Sylvan Lake.

As stated, the properties of the population of which the present sample might be considered representative cannot be specifically defined.

However, it is reasonable to propose that significant findings may be generalized to Canadian towns and cities comparable to those sampled in this study--bearing in mind that only the Protestant, middle-class, Canadian-born sector was sampled. The rural sample, at least, is representative of this sector of the towns sampled, since in each town all the grade eight boys of this sector were included. Whether the Edmonton sample is representative of the same middle-class sector of Edmonton remains speculative. It is noted that the schools sampled differed in size and were located in Edmonton's south and south-east sides. Some information on the locale of the study is outlined to guide generalization of findings to other Canadian towns and cities.

The three towns, Innisfail, Sylvan Lake, and Bowden (actually a village) are located in the County of Red Deer mid-way between Alberta's two largest cities, Edmonton and Calgary. The County of Red Deer itself contains the Province's fifth largest city, Red Deer. The population figures for the three towns (1961 census) are as follows: Innisfail, 2,270; Sylvan Lake, 1,381; and Bowden, 437. Bowden contains a large government sponsored Correctional Institute which employs many of the inhabitants of both Bowden and Innisfail. Many of the others are employed with the oil refinery located near Innisfail. Sylvan Lake is in the summer months a holiday resort. Otherwise, it is primarily the centre for the surrounding farm area. The school population of the three towns is comprised of many students who commute by bus from nearby farms.

As previously mentioned the reason for choosing the County of Red Deer for study was its predominance of Protestant, Canadian-born

inhabitants. Innisfail and Bowden are predominantly of the United Church religion, while Sylvan Lake is predominantly of Presbyterian and United Church religions. (1961 census)

Socio-economic status

As indicated previously, both the Blishen and Home Index scales were used to assess the socio-economic status of the subjects so as to select a middle-class sample from both the rural and urban areas. It was found that the Blishen scale did not differentiate the rural subjects as well as it did the urban. For example, there was no differentiation between the farmer who has a small farm with no, or only part-time, assistance and the farmer with much acreage and one or more full-time farm employees. The Home Index scale better differentiated the rural sample. For this reason, the two scores were not combined.

The two samples compare fairly well with respect to socio-economic status. The range on the Blishen scale for the rural sample is from 42.8 to 64.0 while the urban sample ranges from 43.6 to 64.0. The range of scores on the Home Index scale for both samples is from six to nineteen. Table I shows the average and spread of scores on the Home Index scale.

TABLE I

MEAN AND STANDARD DEVIATION ON HOME INDEX SCALE
FOR RURAL AND URBAN SAMPLE OF GRADE 8 BOYS

Place of Residence	\bar{X}	s_x
Rural	12.37	2.75
Urban	13.82	2.76

Size and composition of sample

The present study was carried out on a sample of 146 grade eight boys--60 in the rural area and 86 in the urban area. Table II shows the number of subjects from the different areas and integration settings.

TABLE II

COMPOSITION OF SAMPLE BY PLACE OF
RESIDENCE AND INTEGRATION SETTING

Place of Residence	<u>Integration setting</u>		Total
	Entrepreneurial	Bureaucratic	
Rural	35	25	60
Urban	25	61	86
Total	60	86	146

Within practical limits, an effort was made to keep the size of the sample as large as possible. The measuring instrument (a measure for

n Achievement) used in this study, as previously stated, has low reliability. If used with a small sample, the probability of making a Type II error may be high. It was hoped to compensate for the low reliability of the testing instrument by increasing the sample size.

The rural and urban subjects were classified as either bureaucratic or entrepreneurial according to criteria outlined in Chapter II. In the majority of cases the fathers who were classified as entrepreneurial had been working in an entrepreneurial situation for at least ten years. The fathers classified as bureaucratic had also worked in that setting for at least the same period. In a few cases, where extensive knowledge of the working history was not available, the fathers were assigned to an integration setting if they had been in that setting for five to ten years. Tables III and IV summarize the occupational composition of the bureaucratic and entrepreneurial groups.

TABLE III

FATHER'S OCCUPATION FOR GRADE 8 BOYS
OF BUREAUCRATIC INTEGRATION SETTING

Father's Occupation	Place of Residence	
	Rural N=25	Urban N=61
Professional and technical	5	15
Managers, business representatives, and kindred	1	11
Government employees (civil servants)	7	21
Clerical, sales, and kindred	2	4
Foremen and kindred	1	4
Operative and kindred	9	6
Total	25	61

TABLE IV
FATHER'S OCCUPATION FOR GRADE 8 BOYS OF
ENTREPRENEURIAL INTEGRATION SETTING

Father's Occupation	Place of Residence	
	Rural N=35	Urban N=25
Farm Owners	20	0
Small-scale business owners and managers	8	13
Small-scale contractors	2	3
Employees of small-scale business	3	3
Commission salesmen	2	6
Total	35	25

Mother's occupation

On the basis of empirical findings to date, one would hesitate to reach a definite conclusion as to the positive or negative impact of employment outside the home. Nevertheless, to the extent that the mother's working might have an influence on the development of achievement motivation, a comparison of the rural and urban samples was made with respect to the proportion of working mothers. In the rural sample, 37 per cent of the mothers (22) were working full or part time and in the urban sample, 35 per cent (30) were working full or part time. A test of significance for two independent proportions was applied and the difference was found not to be significant ($p > .50$). The difference in the proportion of working mothers for the entrepreneurial (34 per cent) and

bureaucratic (36 per cent) samples was also not significant ($p > .50$).

Data collection

The collection of data proceeded in two steps. First the biographical questionnaire (including the items of the Home Index Scale) was administered to all the grade eight boys present in the school being visited. This was administered usually in a room large enough to accommodate all the boys. The writer was present at all times during the testing program to assist the students in answering the questions and to insure that all students gave sufficient information, specifically with reference to the father's occupation. On the basis of information supplied in the biographical questionnaire, certain students were selected as meeting the criteria for the required sample. These were later tested for n Achievement.

All testing for n Achievement was done in the classroom setting. Four slides were projected on a screen and the students were given an answer sheet containing four questions for each picture. These were designed to guide the writing of the stories. Instructions to the students were those outlined by McClelland et al. (1953) and, along with the questions, are shown in Appendix A.

In the rural schools both the biographical questionnaire and the four answer sheets for the n Achievement test were given to the students at the same time. The students first answered the questionnaire and then following a short rest period wrote the n Achievement test. This procedure, even though it departed from that used in the urban schools, was thought best considering the short period of time available for testing,

and the fact that few subjects would have had to be discarded before the testing for n Achievement.

CHAPTER VI

ANALYSIS OF DATA AND STATEMENT OF RESULTS

Statistical tests

A two-way analysis of variance was applied to test the significance of the effects of place of residence and integration setting on the level of achievement motivation. The analysis of variance also supplied a test for the presence of interaction in the data. The model used was that of a two by two factorial experiment involving two fixed variables. Since unequal cell frequencies were obtained, an unweighted means analysis was employed. The unweighted means solution was calculated on the IBM 7040 computer.

The level of significance for the analysis was set at .05.

Several assumptions underly the use of an analysis of variance. It is assumed that the distribution of the variable in the populations from which the samples are drawn is normal. A chi square test of goodness of fit of observed to expected frequencies was applied to each of the four subclass distributions. In all cases the observations in the subclass were found to conform to a normal distribution (p for each of the four subclass distributions was greater than .05).

An analysis of variance further assumes that the variance in the populations from which the samples are drawn are equal. Bartlett's test (appropriate when the cell frequencies are unequal) was applied and the claim that the subclass variances are equal was supported ($p > .10$). It is felt that these and other assumptions underlying the use of an

analysis of variance have been satisfactorily met in the present study.

Results

Table V summarizes the computer output from the unweighted means analysis.

TABLE V
SUMMARY OF ANALYSIS OF VARIANCE

N = 146					
Source of Variation	Sum Sqs.	d.f.	Mean Sq.	F	Significance
A (Place of residence)	19.13	1	19.13	1.128	N.S.
B (Integration setting)	306.22	1	306.22	18.061	Significant ($p < .001$)
AB (Interaction)	45.53	1	45.53	2.685	N.S.
Within cell (Error)	2407.60	142	16.95		

By using the .05 level of significance, the critical value for the test on the interaction is $F_{.95}(1,142) = 3.91$. Since the observed F ratio, $F = 2.685$, is smaller than the critical value, the data support the hypothesis of no significant interaction at the .05 level.

The major hypothesis of this study was that the level of achievement motivation of students from an entrepreneurial background is higher than that of students from a bureaucratic background. The test on the main effect for factor B (integration setting) has the critical value $F_{.95}(1,142)$ of 3.91. The observed F ratio ($F = 18.061$) is larger than

the critical value for a .05 level test. Hence the main effects of integration setting on achievement motivation are significant. Since for this two-factor model the interaction was found not to be significant, "corresponding simple main effects will be equal to over-all main effects" (Winer, 1962, p. 176). The data support the hypothesis that the integration setting has an effect on achievement motivation. As hypothesized, the level of achievement motivation is higher in an entrepreneurial integration setting than in a bureaucratic integration setting ($p < .001$). With reference to the simple effects of integration setting, it may be said that for both the rural and urban subjects, the level of achievement is higher within the entrepreneurial integration setting.

It was also hypothesized that the level of achievement motivation of rural students is higher than that of urban students. By using the .05 level of significance, the critical value for the test on the main effect for factor A (place of residence) is $F_{.95}(1,142) = 3.91$. Since the observed F ratio, $F = 1.128$, is smaller than the critical value, the data do not support the hypothesis that the main effects of place of residence on achievement motivation are significant ($p = .29$). Thus the hypothesis that the level of achievement motivation of rural students is higher than that of urban students was not supported.

Summary of results

The major hypothesis of this study was supported. The level of achievement motivation was found to be higher among the entrepreneurial groups of both the rural and urban areas ($p < .001$). The second hypothesis was not supported. The main effects of place of residence on the level of achievement motivation were found not to be significant ($p = .29$).

CHAPTER VII

CAUSAL INFERENCE

The present study was designed to investigate the relation of integration setting and place of residence to achievement motivation. The problem of inferring population characteristics from sample findings has been considered. An even more complex problem is that of causal inference. "It is quite correct that one can never demonstrate causality from correlation data, or in fact from any type of empirical information" (Blalock, 1964, p. 62). Nevertheless we may, as Blalock suggests, set up causal models based on a priori reasoning. It is then possible to determine the adequacy of these causal models and to eliminate inadequate models which make predictions that are not consistent with empirical findings.

On the theoretical level one can think in causal terms. In the outline of theory pertinent to this study it was postulated that motives are learned and that the early years in a child's life are important for this learning. Child-rearing practices then may be considered to have a causal influence on the development of motivation, particularly achievement motivation. It was further postulated that parental attitudes and values show themselves in child-rearing practices. In particular it was hypothesized that the occupational engagements of the father have the effect of influencing the father's values and his attitudes toward child-rearing, and, by way of child-rearing practices, influence the development of achievement motivation. This chain of causal influences may

exist at the theoretical level but to demonstrate its existence in reality is quite another matter.

This study has shown that the integration setting of the family (as determined by the father's occupation) is related to the son's level of n Achievement. Whether or not these two variables are causally related has not been empirically shown. However, following Blalock's procedure (1964) a causal model can be set up and its predictions compared with the empirical findings. This procedure involves the drawing up of a set of simultaneous equations. From these equations predictions are made about the magnitude of correlation and regression coefficients. In addition error terms are introduced into the analysis to allow for the influence of outside variables. The predictions generated by the model are then checked against the data. This means that actual correlation and regression coefficients have to be obtained from the empirical data.

Based on the theoretical background of this study, the four-variable model shown in Figure 1 could be set up.

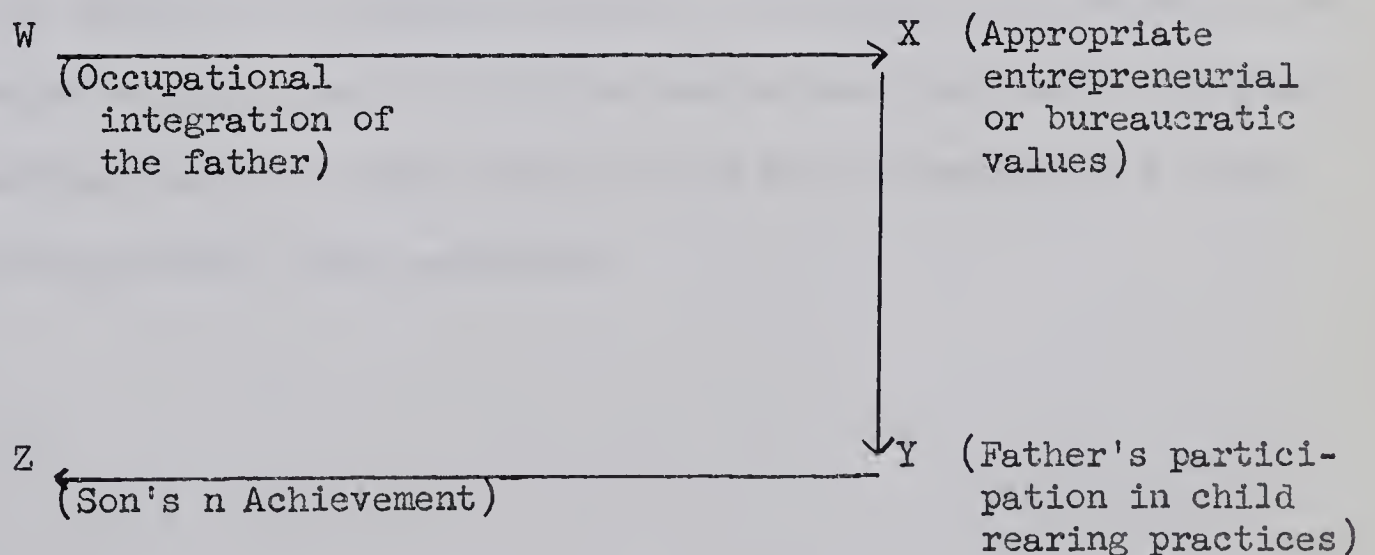


FIGURE 1. Causal Model I

In order to evaluate the adequacy of Model I, all four variables would have to be measured and the intercorrelations among the variables calculated. Then these correlation coefficients could be checked against those generated by the model. For example, Model I would predict that $r_{WZ} = r_{WX}r_{XY}r_{YZ}$. If all four correlation coefficients were available, the actual r_{WZ} could be compared with the expected r_{WZ} (the product of r_{WX} , r_{XY} and r_{YZ}). In addition, other correlation coefficients would be predicted by Model I and in this manner the adequacy of the model could be evaluated. Since the present study attempted to measure only two variables, W and Z, the adequacy of Model I could not be assessed.

This model represents only one of several possible models which could be drawn up on the basis of available theoretical knowledge in the area under study. Other variables could be included or subtracted from Model I. For example, variable X could be omitted, leaving a three-variable model which could be more easily checked. An attempt to measure, in addition to variables W and Z, the extent and characteristics of the father's participation in child-rearing practices would represent an interesting study and would make possible the evaluation of a causal model involving these three variables.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The purpose of this study was to investigate the relationship of different background characteristics to the level of achievement motivation. McClelland has postulated that achievement motivation has its origin in the efforts of parents to train their children to do things for themselves and to do them against standards of excellence. Empirical evidence has established a link between child-rearing practices and the level of achievement motivation. Miller and Swanson have described two contrasting integration settings, the entrepreneurial and bureaucratic, which have been empirically shown to differ in child-rearing practices. The writer has suggested that there is a parallel between independence training and the effects of being reared in an entrepreneurial integration setting.

This study was designed to investigate whether or not a relationship exists between level of Achievement and entrepreneurial and bureaucratic background characteristics. In order to control for various factors shown to be related to achievement motivation, it was necessary to restrict the sample to meet certain criteria. The study included only grade eight boys who hold membership in a Protestant religious group and whose parents were both born in Canada. The investigation was carried out both in an urban and a rural area of Alberta.

CONCLUSIONS

Hypothesis 1

The major hypothesis of this study was supported. Boys of an entrepreneurial background were found to have a higher level of Achievement than boys of a bureaucratic background. This level is significantly higher for the entrepreneurial group of both rural and urban place of residence ($p < .001$). It may be concluded that the father's occupational integration is associated with the achievement motivation of the son. The nature of this association was not investigated in the present study. It is suggested, however, following McClelland's theoretical postulations and empirical findings relating background characteristics to level of Achievement (particularly the Winterbottom finding) that the occupational engagements of the father have an effect on his values and expectations for child-rearing, and in this way influence the son's achievement motivation. The entrepreneurial working situation demands that the father be willing to take moderate risks, have confidence in his ability and take individual responsibility for solving his own problems. One would expect that the entrepreneurial families should stress self-reliant achievement training. It is this which contributes to the development of Achievement.

It may be considered a limitation of this study that the father's attitudes and practices with reference to child-rearing were not investigated. However, it is felt that this would represent an interesting study in itself and would necessitate much effort and careful planning. A value attitude questionnaire might be used to determine whether the

occupants of entrepreneurial occupational status show appropriate entrepreneurial attitudes and behavior. In addition the extent and characteristics of the father's participation in child-rearing would have to be assessed. Chapter VII presents a causal model incorporating these variables. An investigation to determine whether these variables are related and if so whether this relationship supports the causal model outlined might well prove to be of value. The findings of this study will perhaps encourage further investigation in this area.

Hypothesis 2

It was secondly hypothesized that the level of achievement motivation of rural students is higher than that of urban students. This hypothesis was not supported. The overall main effects of place of residence on achievement motivation were found not to be significant ($p = .29$).

It is felt worthwhile at this point to draw attention to certain characteristics in the data which, although not tested for significance in the present study, may merit further investigation. As stated in a previous chapter, the interaction was found not to be significant at the .05 level. However, the AB interaction may be considered a borderline case since the F ratio, $F = 2.685$, is significant at the .10 level. It is suggested that the effects of Factor A (place of residence) may in part be masked by this interaction. The nature of the interaction may be seen from an inspection of Figure 2 showing the profiles corresponding to the subclass means. Inspection of the mean profiles indicates that within the entrepreneurial sample, the rural subjects have a higher level of Achievement than the urban subjects. Within the bureaucratic sample,

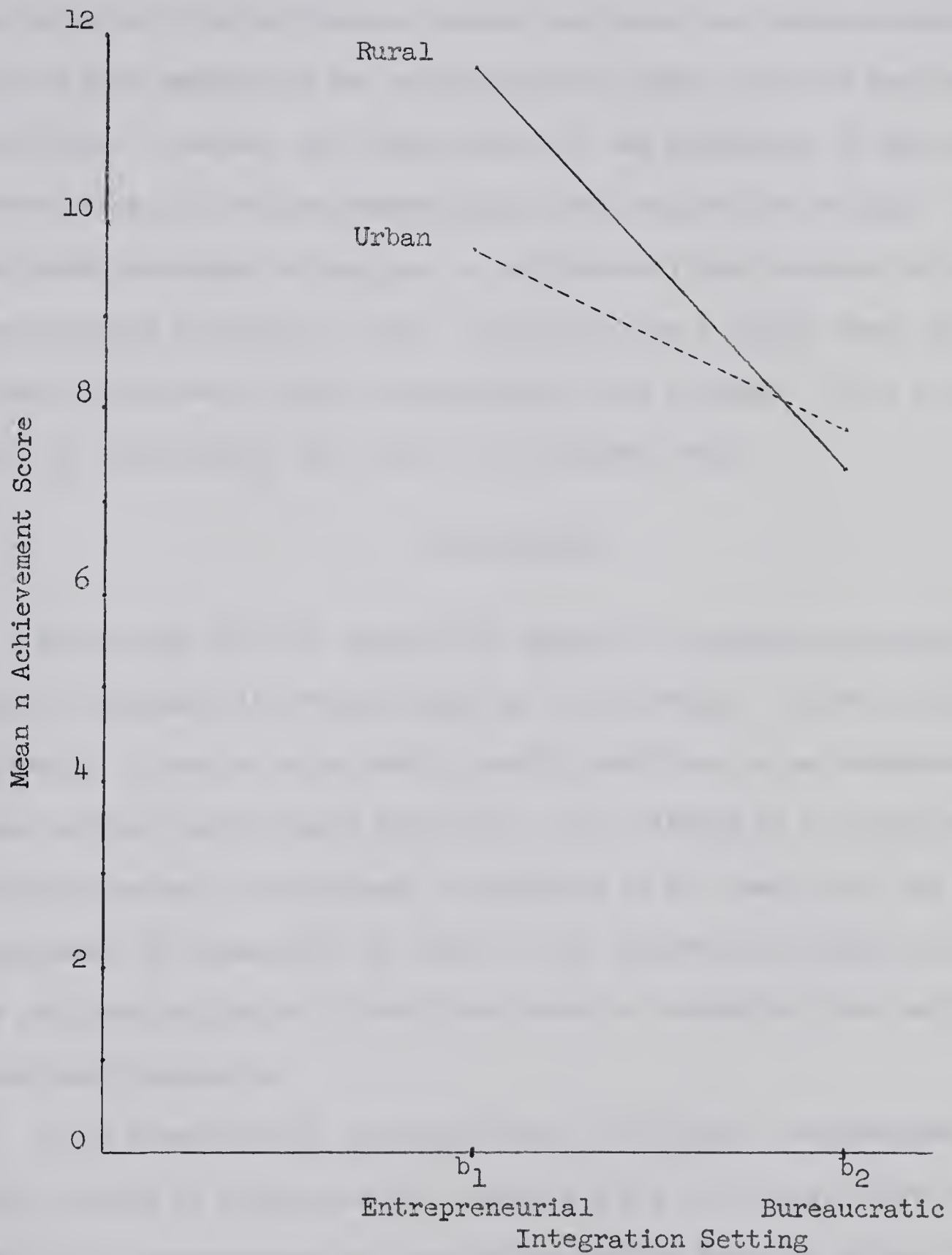


FIGURE 2

PROFILES OF MEANS¹ OF FACTOR B (INTEGRATION SETTING)
FOR LEVELS OF PLACE OF RESIDENCE

¹ Subtract a constant of +5 to obtain the raw score means.

the urban subjects have a slightly higher level of n Achievement than the rural subjects. The difference between the rural and urban n Achievement levels is more marked for the entrepreneurial group than for the bureaucratic group. However, the significance of the difference of the rural and urban means for the entrepreneurial group was not determined. Future experimentation might be designed to deliberately test whether or not entrepreneurial students of rural background have a higher level of achievement motivation than corresponding urban students. Such a comparison is suggested by the data of the present study.

IMPLICATIONS

This study took the background variable, integration setting, and sought to determine its relationship to n Achievement. It was felt that the finding of such a relationship should contribute to an understanding of what produces achievement motivation. The finding of a significant association between occupational integration of the family and the son's n Achievement is meaningful in terms of the theoretical background already outlined in Chapter II and thus tends to strengthen that particular theoretical formulation.

It is theoretically maintained that the father's occupational integration setting to a large extent determines his attitudes toward child-rearing. The entrepreneurial integration setting seems to be more conducive to the development of n Achievement than the bureaucratic setting. This finding, coupled with a knowledge of the behavioral correlates of n Achievement, may be used in a practical sense by teachers and others

attempting to understand the diversity of behavior which confronts them.

This study has used in a meaningful way the occupational classifications of Miller and Swanson (1958). It is suggested that their method of grouping occupations on the basis of motivational requirements represents a worthwhile attempt to add more differentiation in the area of occupational grouping.

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APPENDIX A

Description of the Achievement Measure and Procedure for Administration

The n Achievement measure consists of four pictures (designated A, B, G and H by McClelland). These pictures are used to elicit stories which are then scored for achievement content following the scoring procedure outlined by McClelland et al. (1953). A description of these pictures (in order of presentation) follows:

- B. Two men ("inventors") in a shop working at a machine
- H. Boy in checked shirt at a desk, an open book in front of him
- A. "Father-son". Card 7BM from the Murray Thematic Apperception Test
- G. Boy with vague operation scene in background (sometimes described as a boy possibly dreaming of the future). Card 8BM from the Murray Thematic Apperception Test

Procedure for administration (McClelland et al., 1953, pp. 98-99)

Four sheets of paper clipped together were handed to each student. On each sheet four sets of questions were printed. The sets of questions were spaced on the sheet so that one quarter of the page was allowed for writing about each of them. The four questions were intended to insure complete coverage of a plot. They were:

1. What is happening? Who are the persons?
2. What has led up to this situation? That is, what has happened in the past?
3. What is being thought? What is wanted? By whom?
4. What will happen? What will be done?

The following instructions were then read to the students:

This is a test of your creative imagination. A number of pictures will be projected on the screen before you. You will have twenty

seconds to look at the picture and then about four minutes to make up a story about it. Notice that there is one page for each picture. The same four questions are asked. They will guide your thinking and enable you to cover all the elements of a plot in the time allotted. Plan to spend about a minute on each question. I will keep time and tell you when it is about time to go to the next question for each story. You will have a little time to finish your story before the next picture is shown.

Obviously there are no right or wrong answers, so you may feel free to make up any kind of a story that you choose. Try to make the stories vivid and dramatic, for this is a test of creative imagination. Do not merely describe the picture you see. Tell a story about it. Work as fast as you can in order to finish in time. Make them interesting. Are there any questions? If you need more space for any question, use the reverse side.

The room was then darkened for 20 seconds while the first picture was projected on a screen before the subjects. After 20 seconds the picture was turned off, the lights were turned on, and the subjects began writing. The experimenter kept time, and after a minute had been allowed for each question, would say, "All right, it is about time to go on to the next question." When the subjects had been writing for 30 seconds on the last question, the experimenter would say, "Try to finish up in 30 seconds." At the end of the final minute the experimenter would begin to prepare for the next picture, allowing no more than 15 seconds more than the required time for finishing the stories. The lights would be dimmed and the next picture projected on the screen for

20 seconds, and so on without interruption until all four stories had been written.

APPENDIX B

Biographical Questionnaire Including the 20-item Home Index Scale

1. Name _____
(Last Name) (Christian or First Names)
2. Address _____ School _____
(City or Town)
3. Check here if you are NOT a member of a Protestant church. ☐
4. What is your father's occupation?
(Be specific. For example: sales clerk at Eaton's, door-to-door salesman for Fuller Brush, travelling salesman for Massey-Ferguson)

5. How many years has your father been in his present occupation?
Check the correct answer.
- ☐ less than 5 years
- ☐ 5 to 10 years
- ☐ more than 10 years
6. If less than 10 years, what was your father's occupation before his present occupation? (Again, be specific.)

7. Thinking of your father's occupation, check each statement that is true. IT IS POSSIBLE TO CHECK MORE THAN ONE.
- ☐ My father works for himself.
- ☐ My father has a boss.
- ☐ My father's boss has a boss.
- ☐ My father has somebody working under him.
- ☐ Somebody working under my father has somebody working under him.
8. Does more than one-half of the family income come from something other than wages and salary, for example, from fees or commissions?
Check the correct answer.
- ☐ YES ☐ NO
9. If YES, specify the source of this income by checking the correct answer.
- ☐ fees ☐ profits
- ☐ commissions ☐ other
10. What is your mother's occupation? _____

DIRECTIONS: In the following questions mark your answer by putting a circle in the right place. For example, in the question "Does your family own a car?" draw a circle around the YES if your family does own a car, and around the NO if it does not. Be sure to answer all the questions.

1. Does your family own a car? - - - - - YES NO
2. Does your family have a garage or carport? - - - - - YES NO
3. Did your father go to high school? - - - - - YES NO
4. Did your mother go to high school? - - - - - YES NO
5. Did your father go to university? - - - - - YES NO
6. Did your mother go to university? - - - - - YES NO
7. Is there a writing desk in your home? - - - - - YES NO
8. Does your family have a Hi-Fi or record player? - - - - - YES NO
9. Does your family have a piano? - - - - - YES NO
10. Does your family get a daily newspaper? - - - - - YES NO
11. Do you have your own room at home? - - - - - YES NO
12. Is there an encyclopedia in your home? - - - - - YES NO
13. Does your family own its home? - - - - - YES NO
14. Does your family have more than 100 hard-cover books?
(four shelves about 3 feet long) - - - - - YES NO
15. Did your parents borrow any books from the library in
the past year? - - - - - YES NO
16. Does your family leave town each year for a holiday? - - - YES NO
17. Do you belong to any club where you have to pay fees? - - - YES NO
18. Does your mother belong to any clubs or organizations such
as study, church, art or social clubs? - - - - - YES NO
19. Does your father belong to any such clubs or organizations? YES NO
20. Have you ever had lessons in music, dancing, art,
swimming, etc., outside of school? - - - - - YES NO
21. Was your mother born in Canada? - - - - - YES NO
22. Was your father born in Canada? - - - - - YES NO

APPENDIX C

Raw Data

I.D. No	n Achievement Score	Place of Residence		Integration Setting	
		Rural - 1	Urban - 2	Entrepreneurial - 1	Bureaucratic - 2
001	10	1		2	
002	5	1		2	
003	6	1		1	
004	11	1		1	
005	15	1		1	
006	7	1		2	
007	11	1		1	
008	11	1		2	
009	3	1		2	
010	10	1		1	
011	9	1		1	
012	23	1		1	
013	10	1		2	
014	14	1		1	
015	7	1		1	
016	11	1		1	
017	6	1		1	
018	10	1		2	
019	7	1		2	
020	12	1		1	
021	17	1		1	
022	13	1		1	
023	13	1		1	
024	9	1		2	
025	4	1		2	
026	18	1		1	
027	9	1		1	
028	5	1		1	
029	9	1		1	
030	9	1		2	
031	8	1		1	
032	13	1		1	
033	5	1		1	
034	14	1		1	
035	6	1		2	
036	6	1		2	
037	4	1		2	
038	14	1		1	
039	8	1		1	
040	4	1		2	

I.D. No.	n Achievement Score ¹	Place of Residence		Integration Setting	
		Rural - 1	Urban - 2	Entrepreneurial - 1	Bureaucratic - 2
041	9	1		2	
042	13	1		2	
043	13	1		2	
044	5	1		2	
045	3	1		2	
046	5	1		2	
047	11	1		1	
048	21	1		1	
049	17	1		1	
050	6	1		2	
051	12	1		1	
052	23	1		1	
053	9	1		2	
054	10	1		2	
055	9	1		1	
056	11	1		1	
057	7	1		1	
058	12	1		1	
059	7	1		2	
060	5	1		1	
061	8	2		1	
062	13	2		2	
063	1	2		2	
064	3	2		2	
065	9	2		2	
066	4	2		2	
067	5	2		2	
068	3	2		2	
069	12	2		2	
070	7	2		2	
071	13	2		1	
072	13	2		2	
073	12	2		1	
074	15	2		2	
075	4	2		2	
076	9	2		2	
077	11	2		1	
078	5	2		2	
079	4	2		2	
080	4	2		2	

I.D. No.	n Achievement Score ¹	Place of Residence		Integration Setting	
		Rural - 1	Urban - 2	Entrepreneurial - 1	Bureaucratic - 2
081	2	2		1	
082	7	2		2	
083	8	2		2	
084	10	2		2	
085	12	2		1	
086	16	2		2	
087	7	2		1	
088	11	2		1	
089	8	2		2	
090	3	2		1	
091	16	2		2	
092	8	2		1	
093	3	2		2	
094	13	2		1	
095	10	2		1	
096	13	2		2	
097	11	2		1	
098	4	2		2	
099	19	2		2	
100	12	2		1	
101	4	2		2	
102	8	2		1	
103	12	2		2	
104	10	2		2	
105	9	2		2	
106	7	2		1	
107	16	2		1	
108	16	2		2	
109	9	2		2	
110	13	2		1	
111	10	2		2	
112	7	2		2	
113	10	2		1	
114	3	2		2	
115	16	2		2	
116	4	2		2	
117	5	2		2	
118	11	2		2	
119	7	2		2	
120	8	2		2	

I.D. No.	n Achievement Score ¹	Place of Residence		Integration Setting
		Rural - 1	Urban - 2	
121	6	2		1
122	6	2		2
123	11	2		2
124	6	2		2
125	4	2		2
126	4	2		2
127	7	2		2
128	13	2		2
129	9	2		1
130	14	2		1
131	6	2		2
132	5	2		1
133	12	2		2
134	5	2		2
135	5	2		2
136	4	2		2
137	5	2		2
138	7	2		2
139	5	2		2
140	17	2		1
141	9	2		2
142	6	2		2
143	2	2		2
144	11	2		2
145	3	2		2
146	5	2		1

¹In order to eliminate negative and zero scores, a constant of 5 has been added to each score.

Descriptive Raw Score Data

Group	\bar{X} ¹	s_x
Rural entrepreneurial	11.7	4.8
Urban entrepreneurial	9.7	3.0
Rural bureaucratic	7.4	3.8
Urban bureaucratic	7.8	4.2

¹Since +5 was added to each raw score, to obtain the raw score means subtract 5, i.e., the raw score mean for the rural entrepreneurial group is 6.7, etc. The standard deviation remains unchanged by the addition of a constant.

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